

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PCT04-003	FOR FURTHER ACTION	See item 4 below
International application No. PCT/KR2004/001053	International filing date (<i>day/month/year</i>) 06 May 2004 (06.05.2004)	Priority date (<i>day/month/year</i>) 27 June 2003 (27.06.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ANKUK VALVE CO., LTD.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																							
<input type="checkbox"/>	Box No. II	Priority																							
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																							
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																							
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																							
<input type="checkbox"/>	Box No. VI	Certain documents cited																							
<input type="checkbox"/>	Box No. VII	Certain defects in the international application																							
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 740 14 35</p>	<p>Date of issuance of this report 03 January 2006 (03.01.2006)</p> <p>Authorized officer Philippe Becamel</p> <p>Telephone No. +41 22 338 70 90</p>
--	--

COPY FOR IB

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

LEE, Myoung-tack

C&L PATENT LAW OFFICE 4th Fl., Junyoung Bldg., 1603-
7 Seocho 1-dong, Seocho-gu Seoul 137-877 Republic of
Korea

PCT

RECEIVED

31 AUG 2004

WIPO PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 18 AUGUST 2004 (18.08.2004)

Applicant's or agent's file reference

PCT04-003

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/001053

International filing date (day/month/year)

06 MAY 2004 (06.05.2004)

Priority date(day/month/year)

27 JUNE 2003 (27.06.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC7 F16K 5/06

Applicant

ANKUK VALVE CO., LTD. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HAN, Deok Won

Telephone No. 82-42-481-5471



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 3	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 3	YES
	Claims		NO

2. Citations and explanations :

Reference is made to the following documents:

D1: JP 56-101477 A

D2: US 5,396,922

D3: US 4,523,740

D1 relates to a ball valve, wherein sealing of the ball valve assembly is ensured through a rigid bush 20.

D2 relates to a plastic ball valve which includes a spherical shut-off member, an inner housing, a cylindrical outer housing, and two annular retaining parts lying on either side of the shut-off member.

D3 relates to a rotatable unitary ball valve comprising a unitary valve housing of plastic material, an externally threaded end connector integral with the valve housing, a ball valve, at least one sealing means, and means extending to the outside of the valve housing for rotating the valve.

(1) Novelty: Claims 1-3

The present invention relates to a ball valve which has two symmetric valve casings and which is made of thermosetting resin. The present invention is different from D1 in that D1 is not made of thermosetting resin material, and different from D2 and D3 in that said documents do not refer to any symmetric structure.

Therefore, claims 1 to 3 meet the requirement of PCT Article 33(2).

(Continued in Supplemental Box.)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of :

BOX V.

(2) Inventive Step: Claims 1-3

The subject matter of the present invention is different from that of the prior art documents D1 to D3 in that the present invention has components of simplified symmetric structure for easy manufacturing (i.e. an injection molding process) and that it is made of thermosetting resin against erosion.

Therefore, claims 1 to 3 meet the requirements of PCT Article 33(3).

(3) Industrial Applicability: Claims 1-3

The present invention is applicable to a factory dealing with acid fluids. Therefore, claims 1 to 3 meet the requirement of PCT Article 33(4).

COPY FOR IB

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

LEE, Myoung-tack

C&L PATENT LAW OFFICE 4th Fl., Junyoung Bldg., 1603-
7 Seocho 1-dong, Seocho-gu Seoul 137-877 Republic of
Korea

PCT

RECEIVED

31 AUG 2004

WIPO

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 18 AUGUST 2004 (18.08.2004)

Applicant's or agent's file reference

PCT04-003

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/001053

International filing date (day/month/year)

06 MAY 2004 (06.05.2004)

Priority date(day/month/year)

27 JUNE 2003 (27.06.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC7 F16K 5/06

Applicant

ANKUK VALVE CO., LTD. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HAN, Deok Won

Telephone No. 82-42-481-5471



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 3	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 3	YES
	Claims		NO

2. Citations and explanations :

Reference is made to the following documents:

D1: JP 56-101477 A

D2: US 5,396,922

D3: US 4,523,740

D1 relates to a ball valve, wherein sealing of the ball valve assembly is ensured through a rigid bush 20.

D2 relates to a plastic ball valve which includes a spherical shut-off member, an inner housing, a cylindrical outer housing, and two annular retaining parts lying on either side of the shut-off member.

D3 relates to a rotatable unitary ball valve comprising a unitary valve housing of plastic material, an externally threaded end connector integral with the valve housing, a ball valve, at least one sealing means, and means extending to the outside of the valve housing for rotating the valve.

(1) Novelty: Claims 1-3

The present invention relates to a ball valve which has two symmetric valve casings and which is made of thermosetting resin. The present invention is different from D1 in that D1 is not made of thermosetting resin material, and different from D2 and D3 in that said documents do not refer to any symmetric structure.

Therefore, claims 1 to 3 meet the requirement of PCT Article 33(2).

(Continued in Supplemental Box.)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001053

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

BOX V.

(2) Inventive Step: Claims 1-3

The subject matter of the present invention is different from that of the prior art documents D1 to D3 in that the present invention has components of simplified symmetric structure for easy manufacturing (i.e. an injection molding process) and that it is made of thermosetting resin against erosion.

Therefore, claims 1 to 3 meet the requirements of PCT Article 33(3).

(3) Industrial Applicability: Claims 1-3

The present invention is applicable to a factory dealing with acid fluids. Therefore, claims 1 to 3 meet the requirement of PCT Article 33(4).

PCT

Paper Copy (NOT for submission)

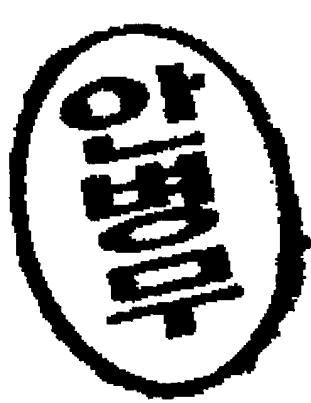
PCT/KR2004/001053

VIII-4-1	<p>Declaration: Inventorship (only for the purposes of the designation of the United States of America) Declaration of Inventorship (Rules 4.17(iv) and 51bis.1(a)(iv)) for the purposes of the designation of the United States of America:</p>	<p>I hereby declare that I believe I am the original, first and sole (if only one inventor is listed below) or joint (if more than one inventor is listed below) inventor of the subject matter which is claimed and for which a patent is sought.</p> <p>This declaration is directed to the international application of which it forms a part (if filing declaration with application).</p> <p>I hereby declare that my residence, mailing address, and citizenship are as stated next to my name.</p> <p>I hereby state that I have reviewed and understand the contents of the above-identified international application, including the claims of said application. I have identified in the request of said application, in compliance with PCT Rule 4.10, any claim to foreign priority, and I have identified below, under the heading "Prior Applications", by application number, country or Member of the World Trade Organization, day, month, and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.</p>
VIII-4-1-1	Prior applications:	10-2003-0042340, KR, 27 June 2003 (27.06.2003)

PCT

Paper Copy (NOT for submission)

PCT/KR2004/001053

		<p>I hereby acknowledge the duty to disclose information that is known by me to be material to patentability as defined by 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the PCT international filing date of the continuation-in-part application.</p> <p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.</p>
VIII-4-1-1-1	Name (LAST, First)	AN, Byung-moo
VIII-4-1-1-2	Residence: (city and either US State, if applicable, or country)	Gyeongsangbuk-do, Republic of Korea
VIII-4-1-1-3	Mailing address:	#60, Eumnae 1-ri, Uljin-eup, Uljin-gun 767-801 Gyeongsangbuk-do Republic of Korea
VIII-4-1-1-4	Citizenship:	KR
VIII-4-1-1-5	Inventor's Signature: (If not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	
VIII-4-1-1-6	Date: (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)	04 May 2004 (04.05.2004)